

Base-Ported Pressure Filter **TF50**



Features and Benefits

- Base-ported pressure filter
- Can be installed in vertical or horizontal position
- Element changeout from top minimizes oil spillage
- Offered in pipe, SAE straight thread, flanged and ISO 228 porting
- Available with non-bypass option with high collapse element
- Integral inlet and outlet female test points option available
- Offered in conventional subplate porting

Model No. of filter in photograph is TF502A10P.

40 gpm
150 L/min
5000 psi
345 bar

NF30
NFS30
YF30
DF40
CF40
CFX30
RF60
RFS50
CF60
VF60



INDUSTRIAL



**AUTOMOTIVE
MANUFACTURING**



**MACHINE
TOOL**



**MINING
TECHNOLOGY**



**STEEL
MAKING**



**MOBILE
VEHICLES**

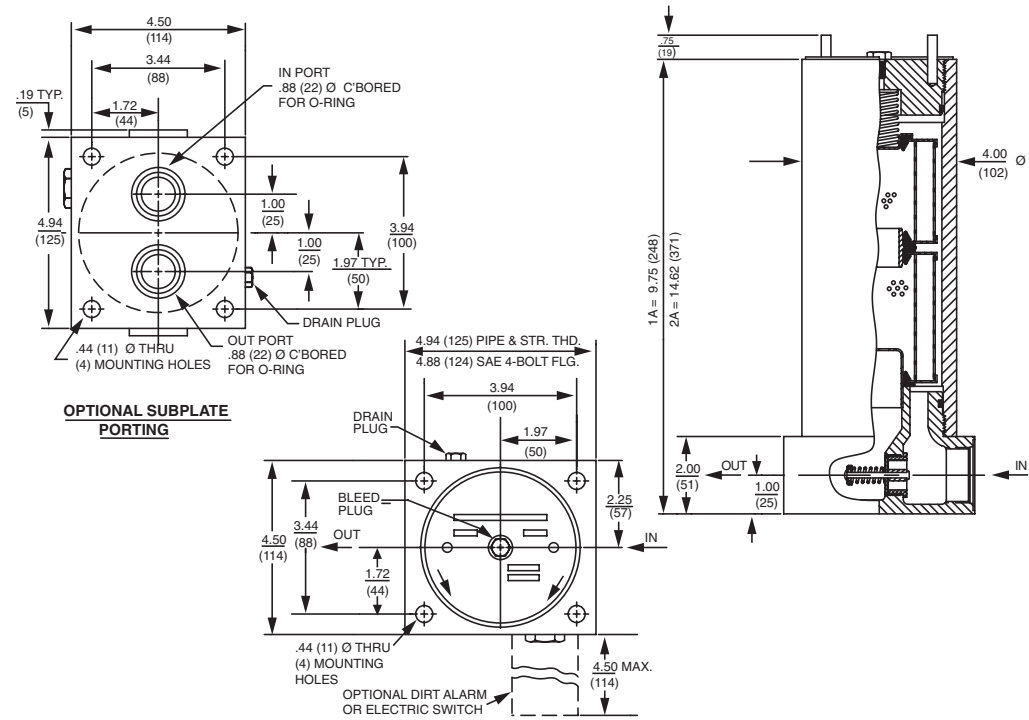
Applications

KF30
TF50
KF50
KC50
KFH50
MKF50
KC65

Flow Rating:	Up to 40 gpm (150 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	5000 psi (345 bar)
Min. Yield Pressure:	15,000 psi (1035 bar)
Rated Fatigue Pressure:	3500 psi (240 bar), per NFPA T2.6.1-2005
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 40 psi (2.8 bar) Full Flow: 69 psi (4.8 bar) Non-bypassing model has a blocked bypass.
Porting Base:	Ductile Iron
Element Case & Cap:	Steel
Weight of TF50-1A:	24.4 lbs. (11.1 kg)
Weight of TF50-2A:	29.8 lbs. (13.5 kg)
Element Change Clearance:	8.50" (215 mm)

Filter Housing Specifications

FOF60-03
NOF30-05
NOF50-760
NMF30
RMF60
Cartridge Elements



Metric dimensions in ().

Element Performance Information

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
A3	6.8	7.5	10.0	N/A	N/A
A10	15.5	16.2	18.0	N/A	N/A
AZ1	<1.0	<1.0	<1.0	<4.0	4.2
AZ3	<1.0	<1.0	<2.0	<4.0	4.8
AZ5	2.5	3.0	4.0	4.8	6.3
AZ10	7.4	8.2	10.0	8.0	10.0
AZ25	18.0	20.0	22.5	19.0	24.0
CCZX3	<1.0	<1.0	<2.0	4.7	5.8
CCZX10	7.4	8.2	10.0	8.0	10.0

Dirt Holding Capacity

Element	DHC (gm)
A3	16
A10	13
AZ1	25
AZ3	26
AZ5	30
AZ10	28
AZ25	28
CCZX3	26*
CCZX10	28*

Element Collapse Rating: 150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

Flow Direction: Outside In

Element Nominal Dimensions: A: 3.0" (75 mm) O.D. x 4.5" (115 mm) long
CC: 3.0" (75 mm) O.D. x 9.5" (240 mm) long

*Based on 100 psi terminal pressure

Base-Ported Pressure Filter **TF50**

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E (cellulose) and Z (synthetic) media
High Water Content	All Z (synthetic) media
Invert Emulsions	10 and 25 μ Z (synthetic) media
Water Glycols	3, 5, 10 and 25 μ Z (synthetic) media
Phosphate Esters	All Z (synthetic) media with H (EPR) seal designation
Skydrol®	3, 5, 10 and 25 μ Z (synthetic) media with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior)

Fluid Compatibility

NF30
NFS30
YF30
DF40

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Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 40 psi (2.8 bar) bypass valve.							
	Series	Part No.								
To 5000 psi (345 bar)	E Media	A3	1A3		2A3	See KF50				
		A10	1A10		2A10					
		A25	1A25							
	Z Media	AZ1	1AZ1	2AZ1		See KF50				
		AZ3	1AZ3		2AZ3					
		AZ5	1AZ5			2AZ5				
		AZ10	1AZ10 & 2AZ10							
		AZ25	1AZ25 & 2AZ25							
Flow	gpm	0	5	10	15	20	25	30	35	40
	(L/min)	0		50		100		150		

Element Selection
Based on Flow Rate

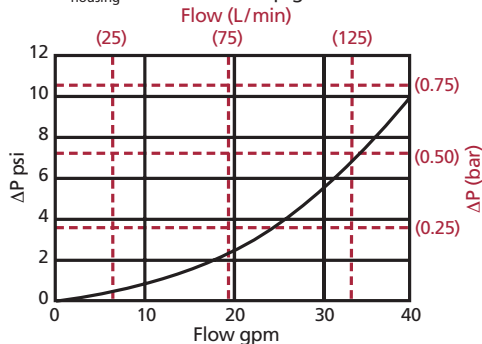
CF40
CFX30
RF60
RFS50
CF60
VF60

Shown above are the elements most commonly used in this housing.

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

ΔP_{housing}

TF50 ΔP_{housing} for fluids with sp gr = 0.86:



sp gr = specific gravity

ΔP_{element}

ΔP_{element} = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

	1A	2A
A3	.53	.27
A10	.36	.18
A25	.05	.03
AZ1	.70	.35
AZ3	.50	.25
AZ5	.32	.16
AZ10	.25	.13
AZ25	.14	.07
CCZX3	.29	
CCZX10	.26	

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

Pressure Drop Information

Based on Flow Rate and Viscosity

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Notes

$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + \Delta P_{\text{element}}$$

Exercise:

Determine ΔP at 20 gpm (75 L/min) for TF50AZ3SMS using 200 SUS (44 cSt) fluid.

Solution:

$$\Delta P_{\text{housing}} = 2.5 \text{ psi } [.22 \text{ bar}]$$

$$\Delta P_{\text{element}} = 20 \times .25 \times (200 \div 150) = 6.7 \text{ psi}$$

$$\text{or} \quad = [75 \times (.25 \div 54.9) \times (44 \div 32) = .47 \text{ bar}]$$

$$\Delta P_{\text{total}} = 2.5 + 6.7 = 9.2 \text{ psi}$$

$$\text{or} \quad = [.22 + .47 = .69 \text{ bar}]$$

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